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CONTENTION RESOLUTION IN A MEMORY MANAGEMENT SYSTEM

Related Applications

This application is related to the following concurrently filed applications by the same inventor:

1. Application Serial No. 10/699,315 ; ~~now U.S. Patent No.~~
2. Application Serial No. 10/699,355 ; ~~now U.S. Patent No.~~

Field of the Invention

This invention relates to memory management facilities for a communication network and in particular to facilities that optimize traffic serving capabilities of the network by reducing blocking at the network nodes. This invention further relates to memory management facilities that improve traffic flow by reducing contention time for access to network memory elements. This invention further relates to an arrangement for reducing processing and contention time by distributing the storage of information between small storage capacity, high speed memories and a lower speed high storage capacity bulk memory.

Problem

It is known to actively manage multi-node communication networks to improve the network traffic serving capabilities. Networks are designed with sufficient facilities at each node to adequately serve the anticipated traffic. This includes the provision of facilities required to serve the normal amount of traffic as well as additional facilities to serve infrequently occurring peak traffic to the extent it is economically feasible. Communication networks are not normally designed to provide the amount of facilities that would be required to serve traffic peaks that might theoretically be possible but rarely, if ever, are encountered.

Multi-node communication networks may encounter traffic blocking even though the network as a whole is engineered to serve an adequate level of traffic. This blocking is due to an unequal distribution of the traffic wherein some, but not all, of the network nodes are overloaded with an inordinate level of traffic. A network node can be overloaded if it is the destination node to which the network connection requests are directed. A network node can also be overloaded if it is connected via a link to the